

CLEAN COPY OF THE CLAIMS

1. (Previously Presented) A terminal, used in a communication system comprising a control station and a plurality of terminals, each of the terminals operable to access a communication medium in accordance with a control frame issued by the control station, and capable of substituting for the control station, the terminal comprising:

a detection portion configured to detect the control frame, which is periodically transmitted from the control station, the control frame containing control information indicating a time period in which access to the communication medium is permitted;

an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further configured to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion; and

a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued,

wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued.

2. (Cancelled)

3. (Previously Presented) The terminal according to claim 1, wherein

when the detection portion detects, before the predetermined second time period elapses after the substitute frame has been started to be issued, a request frame containing information representing a request for allocating a transmission band in which another terminal performs transmission to the control station, the issuance portion issues a response frame containing

information indicating that the request is rejected.

4. (Previously Presented) The terminal according to claim 1, wherein when the detection portion detects, before the predetermined second time period elapses after the substitute frame has been started to be issued, a request frame containing information representing a request for allocating a transmission band in which another terminal performs transmission to the control station, the issuance portion issues no response.

5-6. (Cancelled)

7. (Previously Presented) The terminal according to claim 1, wherein the control station mode portion collects information required for the terminal to operate as a control station from another terminal.

8. (Previously Presented) The terminal according to claim 1, wherein the issuance portion issues a reset signal to collect information required for the terminal to operate as a control station from another terminal.

9. (Previously Presented) The terminal according to claim 1, further comprising: a transmission portion configured to access the communication medium in accordance with the control information contained in a previously detected control frame, when the control frame is not newly detected before the predetermined first time period elapse after the control frame has been most recently detected by the detection portion.

10. (Previously Presented) The terminal according to claim 1, wherein, when the control frame is not newly detected before the predetermined first time period elapses after the control frame has been most recently detected by the detection portion, the issuance portion performs a competition with another terminal, and when an access right to access the communication medium is acquired as a result of the competition, the issuance portion transmits the substitute frame.

11. (Previously Presented) The terminal according to claim 10, wherein a candidate terminal which transmits the substitute frame is previously designated and given a priority by the control station, and

the competition is performed such that a terminal having a higher priority has a higher probability of acquiring the access right to access the communication medium.

12. (Previously Presented) The terminal according to claim 1, wherein a candidate terminal which transmits the substitute frame is previously designated by the control station, and
predetermined first time period used when the terminal is designated as the candidate terminal, is shorter than the predetermined first time period used when the terminal is not designated as the candidate terminal.

13. (Previously Presented) The terminal according to claim 12, wherein the control station gives the candidate terminal a priority, and
a length of the predetermined first time period is determined in accordance with the priority.

14. (Previously Presented) The terminal according to claim 11, wherein the control station designates the candidate terminal based on information about a communication state of a terminal in a network.

15. (Previously Presented) The terminal according to claim 11, wherein he designation of the terminal as the candidate terminal is released, when the control station designates another terminal as the candidate terminal.

16. (Previously Presented) The terminal according to claim 1, wherein an identifier for the control station is contained in the control frame.

17. (Previously Presented) The terminal according to claim 16, wherein the terminal operates as the control station when an identifier for the terminal is contained in the substitute

frame.

18. (Previously Presented) A communication method executed by a terminal, used in a communication system comprising a control station and a plurality of terminals, each of the terminals operable to access a communication medium in accordance with a control frame issued by the control station, and capable of substituting for the control station, the communication method comprising:

detecting the control frame which is periodically transmitted from the control station, the control frame containing control information indicating a time period in which access to the communication medium is permitted;

periodically issuing a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information,

causing the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion; and

causing the terminal which has been operating as the substitute control station to operate as the control station, unless the control frame issued by the control station is newly detected before a predetermined second time period elapses after the substitute frame has been started to be issued,

wherein the periodic issuing of the substitute frame stops when the control frame is newly detected before the predetermined second time period elapses after the substitute frame has been started to be issued.

19. (Previously Presented) An integrated circuit for use in a terminal, used in a communication system comprising a control station and a plurality of terminals, each of the terminals operable to access a communication medium in accordance with a control frame issued by the control station, and capable of substituting for the control station, the integrated circuit comprising:

a detection portion configured to detect, from frames received by a transmission and

reception unit of the terminal, the control frame, which is periodically transmitted from the control station, the control frame containing control information indicating a time period in which access to the communication medium is permitted;

an issuance portion configured to periodically issue a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information, and further configured to cause the terminal to operate as a substitute control station, which guarantees access of the plurality of terminals to the communication medium, and cause the transmission and reception unit to transmit the substitute frame, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion; and

a control station mode portion configured to cause the terminal which has been operating as the substitute control station to operate as the control station, unless the detection portion newly detects a control frame issued by the control station before a predetermined second time period elapses after the substitute frame has been started to be issued,

wherein the issuance portion stops issuing the substitute frame when the detection portion newly detects the control frame before the predetermined second time period elapses after the substitute frame has been started to be issued.

20. (Previously Presented) A control method executed by an integrated circuit for use in a terminal, used in a communication system comprising a control station and a plurality of terminals, each of the terminals operable to access a communication medium in accordance with a control frame issued by the control station, and capable of substituting for the control station, the control method comprising:

detecting, from the frames received by a transmission and reception unit of the terminal, the control frame, which is periodically transmitted from the control station, the control frame containing control information indicating a time period in which access to the communication medium is permitted;

periodically issuing a substitute frame, created by using the control information contained in the control frame most recently detected and including the same information as the control information,

causing the terminal to operate as a substitute control station, which guarantees access of

the plurality of terminals to the communication medium, and causing the transmission and reception unit to transmit the substitute frame, when the control frame is not newly detected before a predetermined first time period elapses after the control frame has been most recently detected by the detection portion; and

causing the terminal which has been operating as the substitute control station to operate as the control station, unless the control frame issued by the control station is newly detected before a predetermined second time period elapses after the substitute frame has been started to be issued,

wherein the periodic issuing of the substitute frame stops when the control frame is newly detected before the predetermined second time period elapses after the substitute frame has been started to be issued.

21. (Previously Presented) The terminal according to claim 1, further comprising a control frame memory portion configured to store the control information contained in the control frame.